

direction) of the reticle stage. Further, since the holding force (holding capability) of the reticle by the reticle stage can fluctuate due to changes in the environment or aging, it is possible to find the range of acceleration when for example an environmental condition changes or every predetermined time period. Note that when holding the reticle by electrostatics, the holding capability particularly changes along with the humidity. Further, it is possible to provide a sensor 50 for detecting the holding capability (in the present example, since a reticle is held by suction, a vacuum sensor) and change (correct) the range of acceleration derived first in accordance with the detected holding capability. The processing for deriving the range of acceleration explained above is performed at least at one of the time of startup of the exposure apparatus and the time of exchange of reticles R.

IN THE CLAIMS:

Please replace claims 1-19 as follows:

1. (Amended) An exposure apparatus which exposes a substrate through a mask formed with a pattern, said exposure apparatus comprising:

a stage which holds said mask and is moved by an actuator to move said mask in a direction on a predetermined plane substantially parallel to a pattern surface of said mask;

an acceleration detection device which detects information relating to acceleration of the stage; and

a control device which controls movement of said stage via said actuator based on a range of acceleration of said stage where an offset, in said predetermined plane, of said mask on said stage is not caused by movement of said stage so that the acceleration of said stage as based on the information detected by said acceleration detection device becomes within the range of acceleration of said stage.

2. (Amended) An exposure apparatus which exposes a substrate through a mask formed with a pattern, said exposure apparatus comprising:

a stage which holds said mask and is moved by an actuator to move said mask in a direction on a predetermined plane substantially parallel to a pattern surface of said mask;

an acceleration detection device which detects information relating to acceleration of said stage;

a posture detection device which detects a posture of said mask on said stage; and

a control device which checks the acceleration of said stage based on the information detected by said acceleration detection device and which initiates detection by said posture detection device when the acceleration of said stage becomes out of the range of acceleration of said stage where an offset, in said predetermined plane, of said mask on said stage is not caused by movement of said stage.

3. (Amended) An exposure apparatus according to claim 2, which further comprises a posture adjustment device which adjusts the relative positional relationship between the mask on the stage and the substrate, and

adjusts the relative positional relationship of the mask and substrate so as to cancel out offset by said posture adjustment device when said control device judges that offset has occurred in the mask.

4. (Twice Amended) An exposure apparatus according to claim 1, which derives the range of acceleration by a process of trial and error by repeatedly detecting offset of said mask while increasing or decreasing the acceleration of the stage in steps.

5. (Amended) An exposure apparatus according to claim 4, wherein the range of acceleration is derived at least at one of a time of startup of said exposure apparatus and a time of exchange of said mask.

6. (Twice Amended) An exposure apparatus according to claim 1, further comprising a storage device which stores the range of acceleration of said stage.

7. (Twice Amended) An exposure apparatus according to claim 1, wherein:
said apparatus further comprises a sensor which detects information relating to a capability of said stage to hold said mask; and

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said control device changes said range of acceleration in accordance with said information.

8. (Amended) An exposure method for exposing a substrate through a mask formed with a pattern, said exposure method comprising:

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holding said mask or said substrate by a stage moved via an actuator to move said mask or said substrate in a direction on a predetermined plane substantially parallel to a surface thereof;

determining a range of acceleration of said stage where an offset, in said predetermined plane, of said mask or said substrate on said stage is not caused due to acceleration or deceleration of the stage;

detecting information relating to acceleration of said stage; and

detecting a posture of said mask or said substrate on said stage when the acceleration of said stage as based on said detected information becomes out of the range of acceleration.

10. (Amended) An exposure method according to claim 9, further comprising performing processing to notify an operator when judging that the offset has occurred in the mask or substrate.

11. (Twice Amended) An exposure method according to claim 8, further comprising:

detecting information relating to the capability of the stage to hold the mask;

and

changing the range of acceleration in accordance with the information.

12. (Amended) An exposure apparatus which exposes a substrate through a mask formed with a pattern, said exposure apparatus comprising:

a stage which holds said mask and is moved by an actuator to move said mask in a direction on a predetermined plane substantially parallel to a pattern surface of said mask;

an acceleration detection device which detects information relating to acceleration of said stage;

a posture adjustment device which adjusts a relative positional relationship between said mask and said substrate;

a storage device in which offset information showing the relationship between the acceleration of the stage and an offset, in said predetermined plane, of the mask on the stage caused by movement of said stage is stored; and

a control device which retrieves from said storage device the offset information corresponding to the acceleration of the stage based on the information detected by said acceleration detection device and adjusts a relative positional relationship between said mask and said substrate based on the retrieved offset information by said posture adjustment device so as to compensate the offset of the mask on the stage.

13. (Amended) An exposure method for exposing a substrate through a mask formed with a pattern, said exposure method comprising:

holding said mask or said substrate by a stage moved via an actuator to move said mask or said substrate in a direction on a predetermined plane substantially parallel to a surface thereof;

determining information showing the relationship between the acceleration of said stage and an offset, in said predetermined plane, of said mask or said substrate on the stage caused due to acceleration or deceleration of said stage; and

detecting information relating to acceleration of said stage to obtain offset information corresponding to the acceleration of said stage based on the determined information and the detected information and adjusting a relative positional relationship between said mask and said substrate based on the obtained offset information so as to compensate the offset of said mask or said substrate.

14. (Amended) An exposure apparatus which exposes a substrate through a mask formed with a pattern, said exposure apparatus comprising:

a stage which holds said mask and is moved by an actuator to move said mask in a direction on a predetermined plane substantially parallel to a pattern surface of said mask;

a detection device which detects information relating to acceleration of said stage; and

an adjustment device which obtains information relating to an offset, in said predetermined plane, of said mask on said stage caused by movement of said stage based on the detected information and which adjusts a relative positional relationship between said mask and said substrate based on the obtained information so as to compensate the offset of said mask on said stage.

15. (Amended) An exposure apparatus which exposes a substrate through a mask formed with a pattern, said exposure apparatus comprising:

a stage which holds said mask and is moved by an actuator to move said mask in a direction on a predetermined plane substantially parallel to a pattern surface of said mask;

a detection device which detects information relating to acceleration of said stage; and

a control device which obtains information relating to an offset, in said predetermined plane, of said mask on said stage caused by movement of said stage based on the detected information and which performs at least one of an operation for recovery from exposure error and notification of said exposure error when judging based on the obtained information, that said exposure error occurs due to said offset.

16. (Amended) An exposure apparatus according to claim 2, which derives the range of acceleration by a process of trial and error by repeatedly detecting the offset of said mask while increasing or decreasing the acceleration of the stage in steps.

17. (Amended) An exposure apparatus according to claim 2, further comprising a storage device which stores the range of acceleration of said stage.

18. (Amended) An exposure apparatus according to claim 2, wherein:
said apparatus further comprises a sensor which detects information relating to a capability of said stage to hold said mask; and
said control device changes said range of acceleration in accordance with said information.

19. (Amended) An exposure method according to claim 9, further comprising:
detecting information relating to the capability of the stage to hold the mask;
and
changing the range of acceleration in accordance with the information.

[Please add new claims 20-27 as follows:]

--20. (New) An exposure apparatus according to claim 1, wherein:
said mask is held by suction at a portion of said pattern surface of said mask on said stage; and

said range of acceleration of said stage is determined based on the suction holding force to said mask by said stage.--

--21. (New) An exposure apparatus according to claim 20, wherein said control device changes said range of acceleration of said stage in accordance with fluctuates in the suction holding force to said mask by said stage.--

--22. (New) An exposure apparatus according to claim 20, wherein said control device changes said range of acceleration of said stage in accordance with fluctuates in installation environment or aging factors of said stage.--

--23. (New) An exposure apparatus according to claim 2, wherein said control device notifies an operator of the fact that said checked acceleration becomes out of said

range of acceleration of said stage or that said offset is caused by the movement of said stage.--

--24. (New) An exposure method according to claim 8, wherein:

said mask is held by suction at a portion of said pattern surface of said mask on said stage; and

said range of acceleration of said stage is determined based on the suction holding force to said mask by said stage.--

--25. (New) An exposure method according to claim 24, wherein said range of acceleration is changed in accordance with fluctuations in the suction holding force to said mask by said stage.--

--26. (New) An exposure method according to claim 24, wherein said range of acceleration is changed in accordance with fluctuations in installation environment or aging factors of said stage.--

--27. (New) An exposure method according to claim 9, further comprising adjusting a relative positional relationship between said mask and said substrate when judging based on said detected posture, that said offset is caused by movement of said stage.--

REMARKS

Claims 1-27 are pending. By this Amendment, claims 1-19 are amended and claims 20-27 are added. No new matter is added. The attached Appendix includes marked-up copies of each rewritten paragraph (37 C.F.R. §1.121(b)(1)(iii)) and claim (37 C.F.R. §1.121(c)(1)(ii)).

In view of the foregoing, reconsideration of the application is respectfully requested.